Claims

1. (Amended) A hydrocarbon sensor comprising a substrate made of a solid electrolyte that conducts protons, and a pair of electrodes formed on the substrate,

wherein at least one electrode of the pair of electrodes contains Au and Al, [and]

assuming that a content of elemental [an] Al [simple substance] in the at least one electrode is "a" mol%, and a content of aluminum oxide in the at least one electrode is "b" mol%, "a" and "b" satisfy a relationship: $a + 2b \leq 7$, and

the at least one electrode contains at least one metal selected from the group consisting of an $AuAl_2$ alloy and elemental Au, wherein the total mol% of the metals selected from the group is at least 50 mol%.

2. (Canceled)

3. (Amended) A hydrocarbon sensor according to claim [2] 1, wherein the at least one electrode contains $AuAl_2$ and [an] elemental Au [simple substance] in a molar ratio of $AuAl_2 : Au = X : 1\text{-}X$, where $0.6 \leq X \leq 1$.

Claims 4-12 (Canceled)